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January 04 2017 19:15

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The (Still Frail) Incorporation of the Sustainability Concept in Chilean Urban Planning Instruments [dagger]*

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Resumen:

A certain level of coherence and integration between these territorial planning instruments is necessary in order to embrace the vision, objectives, guidelines, and initiatives and to assure that the concept of sustainability is explicit in the urban planning as a whole. [...]because there is minimum consideration of the concept of sustainability in the Urban Development Regulatory Plans and Inter-communal Regulatory Plans, and because there is a lack of presence of the concept of sustainability in the Communal Regulatory Plans at almost all the levels of abstraction, we conclude that, in Chile, the territorial planning instruments lack a real consideration of the concept of sustainability in their design and statements. [...]sectorial decisions that ministries drive through their own planning and investment programs⁵⁰ predominate beyond the efforts of regional and local planning being promoted through the instruments analyzed.

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I. Introduction

In recent decades, there has been a growing interest and concern regarding sustainability. Various academic and political groups have disseminated this growing concern for sustainability through diverse conventions and multilateral agreements. Although the concept of sustainability has been internationally promoted, taking the concept to practice is, in the end, a task given to national governments. The national governments then frequently delegate responsibilities to lower levels of government. This is a crosscutting task that requires efforts for institutional and sectorial coordination along with capacity building,¹ interdisciplinary approaches, and comprehensive planning, all combined with ongoing theoretical contributions on the subject.

In this context, territorial urban planning committed to the pursuit of a perdurable balance between the environmental, social, and economic fields is needed to increase urban sustainability. This article discusses how the concept of sustainability and its dimensions have been incorporated into Chile's territorial planning instruments. For this article, we have chosen to examine five territorial planning instruments: two of normative character and three of indicative character. Together these instruments form the basic structure of urban development and planning in major Chilean cities.

The case studies for the analysis either are consolidated metropolitan areas in Chile (Greater Santiago, Valparaíso, and Gran Concepción) or are in the process of becoming a consolidated metropolitan area (Iquique-Alto Hospicio, Antofagasta, La Serena-Coquimbo, RancaguaMachali, Temuco-Padre de las Casas, and Puerto Montt-Puerto Varas). The case studies correspond to nine regions² and fifty-nine communes³ where almost 60% of the total population of the country resides, and where the selected planning instruments are put into action.

Based on a methodology that combines techniques of content analysis and the application of descriptive statistics using results of an exploratory nature, we concluded that the concept of sustainability (as conceived theoretically) is scarcely incorporated, especially in normative instruments. The recognition of some of its main dimensions-social equity, local economic development, and environmental sustainability-is also uncommon.

II. Sustainability: From Abstraction to Praxis

The concept of sustainability is increasingly popular and in frequent use around the world. Sustainability appears in reports, academic papers, the news, and even in advertisements, most often with a positive connotation.⁴ There is little clarity, however, as to what sustainability means. There have been various

interpretations and formulations of the concept of sustainability. These various interpretations and formulations emphasize different aspects of sustainability and prioritize different practices, depending on the discursive matrix to which they are affiliated.⁵

To date, the most recognized form of the concept of sustainable development is associated with the 1987 publication of the United Nations World Commission on Environment and Development report "Our Common Future," better known as the Brundtland Report.⁶ The Brundtland Report highlights the importance of balancing the needs of present and future generations in ecological, social, and economic fields to overcome the challenges we face, and to better achieve sustainable development.⁷

To achieve these balances, it is important to respect the capacity for renewal and provision of ecosystems, as well as to review and reconsider the horizons of our processes of decision-making, focusing on the long term, to be able to promote intergenerational equity. In 2000, Ravetz popularized the balance between three areas—social and political, economy and industry, and environment and resources—by plotting three spheres that intersect to demonstrate a scheme for achieving sustainability.⁸ Public policy and its planning must simultaneously promote equilibrium between human needs and consumption demands to achieve a greater quality of life. This encourages greener lifestyles within cultural goals and endorses more efficient, cleaner technologies to protect the earth's ecosystems, while still attending to humanity's needs. The difficulty of translating this conceptual model into practice has led to different interpretations of both the model proposed by Ravetz, as well as the scope of the concept of sustainability.⁹

While there is no consensus on how to implement the definition of sustainability,¹⁰ we highlight the United Nations' Agenda 21 of 1992 as one of the tentative definitions.¹¹ Agenda 21 is possibly the best-known and most referenced source when translating the concept of sustainability into lines of action, including more concrete and specific programs.¹² According to Barton, the "[Brundtland] report showed [a] broad framework of interconnected systems, each with a clear direction, while the Agenda 21 criteria, indicated the aspects of management at the local level."¹³

Since then, many summits and multilateral agreements have occurred, such as the Cancún Climate Change Conference in 2010 and the Rio United Nations Conference on Sustainable Development in 2012. These summits and agreements have contributed to strengthening the concept of sustainability in the international sphere by reinforcing its status as a universal goal.¹⁴ This universal goal is based on a global interest shared by all of humanity and is the responsibility of each and every country, especially those politically committed to this international issue.

These events are able to establish bridges between the international arena, where the negotiations take place, and the local scales of national states.¹⁵ This statement is reaffirmed by most of the United Nations final reports on sustainability, which contain sections devoted specifically to the urban issue.¹⁶ Without going into the specifics of any of these international agreements, what interests us is emphasizing that as a signatory, the Chilean state must take steps to implement content prescribed in these documents within its territory.

It is also challenging to incorporate the spatial variable into the process of applying the concept of sustainability to urban issues. Environmental Impact Reports are well advanced on this aspect, particularly regarding building comprehensive assessment methodologies for urban project reviews.¹⁷ These impact reports, however, are undertaken after the planning has already been developed. They try to ensure that the guidelines and the regulatory codes are followed and enforced. Therefore, these studies can contribute only to urban sustainability within previously defined frameworks. The concept of sustainability must be incorporated into the earlier stage of defining the vision (ideally) or at least prior to the actual exercise of urban or territorial planning.

Additionally, it is important to consider that some forms of spatial organization are more compatible with the promotion of urban sustainability than others. For example, the existence of urban sub-centers that offer services may reduce the need for extra commutes in large metropolitan areas, saving energy as well as reducing levels of air and noise pollution.¹⁸ Another example is enhanced technology for construction to allow

better circulation of air that may decrease adverse effects associated with the formation of heat islands.¹⁹ While there is no single answer to which shape and spatial organization is more sustainable, other authors have advanced the field of study that relates the spatial variable with urban sustainability.²⁰ As a corollary, planning has to take care of this issue: from activities that are purely spatial zoning, to the most indicative-creating goals and action Unes for the local setting. There is still little progress, however, in the incorporation of sustainability in urban planning and this should be a priority.²¹ Although there is no doubt that it is not enough to incorporate the concept of sustainability in territorial planning instruments, whether they are regulatory or just guidelines, the consideration of the scope of this conceptualization in territorial planning instruments is an important step. Despite its lack of precision in operative terms, various international organizations have disseminated and globally defended the concept of sustainability; and the concept has gained much strength in the discursive field. The term "sustainability" is used as a kind of "desirable adjective" for any type of policy, program, or project, whether for civil society, the state, private, or all the above. Perhaps the concept's vagueness in its deployment into practice is its main strength. It allows each actor to tailor a solution to the particular circumstances. Difficulties emerge, however, in identifying and comparing the levels of sustainability achieved over time, and in different localities and territories of the world. Faced with this dilemma, there are a number of possible theoretical positions and associated methodological designs. Ravetz, for example, maintains that this dilemma leads to an oxymoron, in which the evaluation of sustainability is both impossible and essential.²² Kerry Turner proposed a classification system focusing not on whether something is sustainable or unsustainable, but instead classifying it from weakest to strongest in sustainability-in which strongly sustainable is the goal to follow.²³ Despite the differences in their proposals, both authors share a more conceptual approach to the subject.²⁴ In this article, the focus is put on whether or not the sustainability concept and its main dimensions are included in the texts of the Chilean territorial planning instruments, regardless of the nuances regarding its conceptualization. In this sense, this is a more pragmatic investigation. The focus of this article is practical and concentrates on analysing in which manner and how accurately the concept of sustainability has been collected in the territorial planning instruments in Chile. The methodology corresponds to a study with an exploratory focus: investigating a problem rarely studied, inquiring from an innovative perspective, and paving the way for further studies.²⁵ Its main thrust is focused on classifying and analysing specific cases reviewing territorial planning instruments in nine regions-consolidated metropolitan areas (Greater Santiago, Greater Valparaiso and Greater Concepcion) or areas in the process of becoming metropolitan areas (IquiqueAlto Hospicio, Antofagasta, La Serena-Coquimbo, Rancagua-Machali, Temuco-Padre de las Casas, and Puerto Montt-Puerto Varas). Additionally, this article is pioneering as it is trying to generate knowledge that will allow an increase in research on the relationship between sustainability and urban planning instruments.

III. Territorial Planning Instruments with Impact on Urban Development

There are five territorial planning instruments with higher incidence in urban development in Chile. Two types of territorial planning instruments are distinguished: (1) The territorial planning instruments of normative character that regulate land uses, such as the Inter-communal Regulatory Plans²⁶ and the Communal Regulatory Plans;²⁷ and (2) the territorial planning instruments of indicative nature which set the guidelines for land uses and priorities for nonrestrictive public investment-such as the Regional Development Strategy,²⁸ the Urban Development Regulatory Plan,²⁹ and the Community Development Plan.³⁰

The legal and institutional framework of the Inter-communal Regulatory Plan, Communal Regulatory Plan, and Urban Development Regulatory Plan are conformed by the General Law of Urbanism and Construction (LGUC) Law No. 458 of 1975³¹ and all the periodicals of the Division of Urban Development of the Ministry of Housing and Urbanism (MINVU).³² The Constitutional Law on Regional Government and Administration (LOCGAR) Law No. 19.175,³³ dictated in March of 1993, is the legal framework of the Regional Development Strategy. LOGGAR led to the creation of regional governments in Chile and advanced the regional administrative

decentralization process initiated by the military government in 1974,³⁴ all in the absence of democracy. Finally, the Constitutional Law of Municipalities (LOCM) No. 18.695 is the legal framework of the Community Development Plan.³⁵ The LOCM was substantially amended in 2006, and replaced several aspects of the original law enacted in 1988 by the popular military government (significantly restricting local autonomy and sovereignty).³⁶ Today, both the Regional Development Strategy and Community Development Plan are under the institutional framework of the Sub-secretariat of Regional Development of the Ministry of Interior. Table 1 shows the most important aspects of the territorial planning instruments with urban impact.

While sustainability is a broad concept that is not universally applied, incorporating sustainability into documents such as territorial planning instruments with urban impact reveals that those involved and responsible for urban planning increasingly value the concept of sustainability and perceive it as key for the future of cities.³⁷ This is a step in the direction of sustainable development. Exploratory research is justified in this study because planning documents are being reviewed in search of the use these documents give to the concept of sustainability. Exploratory research is also justified because it is known that there will be access to all the required documents for the analysis and additionally, it allows us to advance in the understanding of how to promote sustainability in its purely spatial sphere.

This exploratory study seeks to determine to what extent the concept of sustainability has been collected in regulatory and indicative territorial planning instruments in Chile. Therefore, our hypothesis is as follows: Although the concept of sustainability has not been applied in its comprehensive understanding by the regulatory and indicative territorial planning instruments, it has been partially applied in its dimensions (social, economic and environmental). The incidence, however, is not ample, multidimensional, or homogeneous enough between territorial planning instruments, making urban planning in Chile an exercise that is rather untied to considerations of sustainability in its design and development.

IV. Methodology

Official documents published in paper or on official websites are reviewed to analyze how and to what extent the concept of sustainability is explicit in the various instruments of urban and territorial planning in Chile, of both indicative and normative character. Most of these documents are located in the National Territorial Planning Instruments section of the web page of the Urban Observatory of the Ministry of Housing and Urbanism.³⁸ Only those instruments in force are considered.

Content analysis is used to understand this material. This technique seeks to infer relevant consequences of sociological, political, and historical nature among others, about the origin, destination, and aspects of the messages. The objective of content analysis consists in concretely observing and recognizing the meaning of the elements that structure the documents (words, phrases) and in properly classifying them for analysis and subsequent explanation.³⁹

The instruments selected and described above form the basis of the determinants of land use and are of major urban impact. The instruments, however, reflect the aspirations of institutional and civic character regarding the development of urban centers and the territory in general, without prejudice to the fact that in most cases, reality does not necessarily match with the guidelines proposed.⁴⁰

The initial stage of this study is to identify and systemize the incorporation of the concept of sustainability. To conduct this initial stage, we established three levels of abstraction to categorize the identified terms. The categories are also related to structural hierarchies that are present in the descriptions of the territorial planning instrument (IPT):

* Level of political abstraction: Refers to any explicit definition of the concept of sustainability in terms of the vision, mission, and/ or target-image of the instrument.

* Level of strategic abstraction: Refers to any explicit definition of the concept of sustainability in terms of general and specific objectives, strategic guidelines, and/or scope of intervention of the instrument.

* Level of operating abstraction: Refers to any explicit definition of the concept of sustainability in terms of

specific initiatives, projects, programs, and/or specific lines of action of the instrument.

The first level of abstraction is defined as political because those involved in the instrument's design or formulation notice in the vision or mission that there is a need for the instrument's design or formulation to reach a certain level of agreement regarding a common general image or shared long-term goal for the territory in question. In this sense, it is political because those that participate in its construction need to negotiate and make compromises to find a common ground that will orient the planning process. In some cases, this even includes involvement of the affected population or at least part of their representatives, through civil participation instances. In this regard, in the level classified as political, we reviewed whether the concept of sustainability has been included in the future vision set out in the documents to assess whether those involved in its formulation assume sustainability as something valuable and desirable in urban planning.

The second level of abstraction is defined as strategic because it reflects the different options perceived as available at the time the -planning instruments were developed to achieve the mission or target image established previously at the political level. It is strategic because it is embedded in the set of specific objectives or guidelines that are to be prioritized within the scope of the instrument. In a sense, it is strategic because it defines, in general outlines, the main areas and actions to be taken as to achieve the general goal. This is an intermediate level between the most conceptual-here, the political level-and the closest to the practical-the operative level. The presence of the concept of sustainability in these more strategic sections of the documents reveals an incorporation of the concept of sustainability beyond the most basic and general level of concordance of the concept. This is achieved not only by naming it, but also by establishing guidelines for its implementation.

Finally, the third level of abstraction is defined as operative, as it tries to recognize if the concept of sustainability is explicit in initiatives, projects, or specific lines of action proposed by the instrument. This is the level closest to the implementation of a more sustainable territorial planning. The presence of the concept at this level indicates a higher standard of commitment to sustainability, particularly if the concept has been incorporated into the other two levels and especially if it is a policy instrument.

These three levels of abstraction allow us to better identify, distinguish, and ponder the judgment regarding how explicitly the concept of sustainability is incorporated in the instruments of territorial planning. Overall, the three levels range from more conceptual to more practical considerations, as shown in Figure 3.

Because the concept of sustainability is multidimensional, however, it was considered necessary to implement a certain level of disaggregation, based on the three most recognized dimensions of sustainability. The three levels of sustainability are defined recursively in the literature as:

* Social Equity: Refers to greater inclusion and social justice in terms of equal opportunities, rights, and obligations relating to various aspects of human development.⁴¹

* Local Economic Development: Suggests that economic development should make an efficient and sustainable use of existing endogenous resources by encouraging local entrepreneurship and the creation of an innovative environment in the territory.⁴²

* Environmental Sustainability: Refers to an efficient and rational use of environmental goods and services of the current population, without compromising or impairing the welfare of future generations.⁴³

Based on these two categories-abstraction levels and dimensions of sustainability-we are capable of analyzing the different instruments of territorial planning, corresponding to the metropolitan areas in Chile: Santiago, Valparaiso, and Concepcion, and also the areas in the process of becoming metropolitan areas: Iquique-Alto Hospicio, Antofagasta, La Serena-Coquimbo, Rancagua-Machalí, Temuco-Padre de las Casas, and Puerto Montt-Puerto Varas. For each level of abstraction, the three possible dimensions are considered. We added a fourth column when the concept of sustainability is explicitly and accurately contained in the definitions. This is only considered, however, for political and strategic levels of abstraction, not for operative level of abstraction. This is because, at this level, initiatives and/or projects tend to be more specific in some of the dimensions of

their definition. Figure 4 graphically shows the classification scheme utilized.

Finally, in the construction of the tables and the analysis, we used a binary character classification for the systematization. The value "0" is assigned when the concept of sustainability or one (or more) of its dimensions is not explicit in the revised territorial planning instrument. The value is "1" if the concept of sustainability is explicit. Following this scheme, we reviewed several documents related to territorial planning instruments in Chile and created a database in which the abstraction levels intersect with the use of the concept of sustainability and its three dimensions. We then analyzed the tables based on descriptive statistics.

V. Results Analysis

As noted above, we analyzed the territorial planning instruments that have a direct effect on the urban planning of each consolidated Chilean metropolitan area or area in the process of becoming metropolitan area. Each territorial planning instrument can be described from the point of view of its demographic and political-administrative capacities, as seen in Table 2. These correspond to nine metropolitan areas, located in nine of a total of the fifteen regions. Table 2 describes the number of municipalities that are a part of the metropolitan areas and the population numbers of those areas in relation to the total population of the regions where they are located. For the metropolitan area of Iquique-Alto Hospicio, only two communes (or municipalities) are part of the metropolitan region, out of a total of seven that compose the region. Nonetheless, these two communes contain the majority of the region's population (86.1%). In the case of Gran Santiago, thirty-four out of fifty-two communes constitute the metropolis, containing 87.8% of its region population.

Therefore, the analysis involves nine urban areas where 66.4% of the total region's population resides. Not only does this reveal high demographic concentration, but also political-administrative concentration, as the urban centers comprise 59 of a total of 270 existing municipalities in the nine regions selected. Additionally, it is important to point out that 58.3% of the country's population lives in these metropolitan areas, but these metropolitan areas only make up 17.1% of the total number of municipalities in the country. It is important to note that all the municipalities considered in this analysis are urban and reach, on average, a level of urbanization close to 100%.

Accordingly, considering this reality, we will analyze the contents of the territorial planning instrument under the proposed methodology. For this purpose, we will arrange the territorial planning instruments from the largest to the smallest with respect to the spatial scale, with regional instruments being the largest and local instruments being the smallest. We will also consider, however, a hierarchy principle from a theoretical point of view.⁴⁴ The proposed order for the analysis will be: Regional Development Strategy, Urban Development Regulatory Plan, Inter-communal Regulatory Plans, Community Regulatory Plans and Community Development Plan.⁴⁵

A. Regional Development Strategy Analysis

The contents of the Regional Development Strategy of the nine regions considered for analysis are shown in Table 3. This table summarizes the results of the review of the in each region where the metropolitan areas are located. The results are expressed in binary terms, where 1 indicates it is positive and 0 that it is negative. This procedure of checking for the inclusion of the sustainability concept and/or of one of its dimensions was made for the three levels of abstraction (political, strategic and operative). This same procedure was made for the other territorial planning instruments analysed in this work. In the case of the results found for the Regional Development Strategy instrument, we can see that the Araucania region's Regional Development Strategy mentions the sustainability concept and its dimensions in both the political and the strategic level. Nonetheless, when we reach the operational level, there is no mention of the dimensions of sustainability (reminder: at this level there isn't a specific category for the sustainability concept because its allusive nature is not a good fit for the operational level of abstraction, as it was explained at the methodology section). Complementary to this left to right reading of the table that is focused on a case-by-case analysis, there is a top to bottom reading, focused on the categories. In this form of reading, we can see that in spite of the fact that only five of the instruments contemplated a mention to the local economic development in the political level of abstraction, all nine of the

instruments made mention to sustainability in the strategic level. Overall, it is in the strategic level that the majority of inclusions of the concept of sustainability and its dimensions can be found.

We determined that the concept of sustainability in the Regional Development Strategies is of indicative nature. This means that they do not oblige the different public entities to comply with the guidelines of this instrument. In contrast, normative instruments, such as the Intercommunal Regulatory Plan and the Communal Regulatory Plan, require all public entities and actors involved in urban planning to comply with its specifications, restrictions, and requirements. Table 3 is expressed on a more strategic level of abstraction and less on an operative level of abstraction. In practice, this means that it is more likely to find the concept of sustainability explicitly stated in general objectives, specific objectives, and guidelines, rather than in the vision of the pursued regional strategy. We must note, however, that the first situation (an inclusion of the sustainability concept and its dimensions) occurs in only five of the nine Regional Development Strategies analyzed. We must also take into account that in the consolidated three metropolitan areas, the concept is only present in the case of Gran Valparaiso at the strategic level.

If we consider the explicit content that each dimension of sustainability reaches at the three levels of abstraction proposed, Table 3 shows that the highest concentration also occurs at the strategic level and to a lesser extent, at the operative level. What is notorious is the primacy of the Local Economic Development dimension at the strategic level, which is explicitly present in the Regional Development Strategies of all the reviewed cases. On the other hand, at the level of political abstraction, the dimension of Social Equality prevails (seven of nine cases), while at the strategic level, Local Economic Development (nine of nine cases) and at the operative level, Environmental Sustainability (four of nine cases).

In summary, we can consider that the Regional Development Strategy is an instrument of indicative nature that is supposed to have the capacity to visualize regional development from the perspective of the future. The Regional Development Strategy is also designed to guide public and private action, thus also guiding preceding normative planning. It is concerning that the Regional Development Strategy only explicitly contemplates the concept of sustainability in its vision statement in a few cases-not even at the operational level.

B. Urban Development Regulatory Plan Analysis Our analysis of the results of the revision and classification of the contents of the explanatory notes of the Urban Development Regulatory Plan, are summarized in Table 4. Table 4 shows the same analysis performed for the previous case, but this time applied to the PRDU. The concept of sustainability is not explicitly present in most Urban Development Regulatory Plans, only reaching its maximum expression at the strategic level of abstraction (three of nine cases). There is an explicit inclusion of the concept of sustainability in terms of overall and specific objectives, strategic guidelines, and/or scope of intervention of the instrument. While the Urban Development Regulatory Plan is a planning tool that is more limited in its objectives than the Regional Development Strategy, including the concept of sustainability in the Urban Development Regulatory Plan would help define the roles of urban centers, and would support the decision process on public and private investment in the territory. We do not understand why the concept of sustainability is rarely present in these instruments.

In terms of dimensions, only the consideration of the Urban Development Regulatory Plan's environmental sustainability dimension is significant at the level of strategic abstraction, as it is present in six of nine cases reviewed in the Urban Development Regulatory Plan. The consideration is marginal for the three levels of abstraction with respect to the other dimensions of sustainability.

C. Inter-communal Regulatory Plan Analysis

We analyzed the contents of the Inter-communal Regulatory Plan using the same method as the other territorial planning instruments. The results of this analysis are summarized in Table 5. Table 5 shows the same analysis performed for the previous case, but this time applied to the Inter-communal Regulatory Plan. The primary function of this normative instrument is to zone land uses in order to meet the different benefits that are present in the territory (housing, transportation, equipment, areas of economic development, and areas of risk

protection). The Inter-communal Regulatory Plan is used especially to coordinate urban planning among municipalities. These instruments barely contemplate the concept of sustainability at the strategic level of abstraction (two of nine cases).

As for the analysis of dimensions, the result is significant at the strategic level of abstraction only in the case of the environmental sustainability dimension (six of nine cases). For example, in the case of Coquimbo's Inter-communal Regulatory Plan, the Third and Fifth Articles complement each other to guarantee that urban activities will be done taking into account environmental sustainability guidelines:

Third Article: The zoning of productive activities that are classified as harmless, annoying, unhealthy, hazardous or contaminant, will always be considered as having an intercommunal impact and may only be localized in areas that are expressly recognized for this purposes. Productive activities will be graded in accordance with the provisions of the General Urban Development and Construction Law [LGUC].

Fifth Article: To protect and conserve natural resources and cultural heritage of intercommunal value, official protection sites have been established. These correspond to the areas of official protection, defined by the National System of Protected Areas, whose rules are established by the law N° 18.362 of the Agricultural Ministry, and by the National Monuments entity, governed by the law N° 17.288 of National Monuments.⁴⁶ As for the other two levels of abstraction (political and operative), our review showed no explicit consideration of these dimensions. The most likely explanation for this result has to do with the nature of the Inter-communal Regulatory Plan. Although in some cases the documents mention that they consider the vision, it is not fully explicit. If the statement was explicit, it would be considered a matter of the political level of abstraction of the respective Regional Development Strategy. Sometimes, however, it is the Regional Development Strategy itself that does not fit to the categories of analysis defined in this study. Finally, at the operative level, the Inter-communal Regulatory Plan does not contemplate initiatives or specific projects, but rather modifications of normative order, therefore are not feasible to be considered in our classification.

D. Communal Regulatory Plan Analysis

As was defined in Table 1, the Communal Regulatory Plan pursues very specific objectives which can be summarized as follows: to define conditions of territorial occupation, to zone the urban area, to distribute densities, to define priorities of urban expansion (when possible) and to define normative codes. Therefore, under the methodology proposed in this study, when reviewing the fifty-nine Communal Regulatory Plans of the communes in this study, the corresponding table results in basically all "Os", which is why it is not shown in this case. That is, the Communal Regulatory Plan does not consider the concept of sustainability in either of the two levels of abstraction (political and strategic), nor does it explicitly mention any of the three dimensions.

In support of the above, we reviewed the Communal Regulatory Plans and were able to distinguish the most frequent terms that give meaning and orientation to this communal-level planning instrument. Examples of these terms are: territorial development, territorial vocation, compatibility of uses, harmonious development, improve accessibility, enhance livability, optimize natural resources, and protect natural heritage. Although it is possible to assign the latter terms to the dimension of environmental sustainability, they are the only cases at the level of political abstraction that could be considered. These terms, however, are mentioned at a very low frequency and were found in less than 10% of the reviewed Communal Regulatory Plans. Finally, considering the objectives defined by the territorial planning instrument, none of the Communal Regulatory Plans mention the concept of sustainability or make any reference to their dimensions.

E. Community Development Plan Analysis

Table 6 shows the analysis of the contents of Community Development Plans for a total of fifty-nine municipalities.⁴⁷ Performing the top to down reading, it is possible to observe that the concept of sustainability has been explicitly included in less of one-third of the documents analyzed (27.6%) in the political level of abstraction and less than one-fifth (17.2%) for the abstraction level. This result was surprising because this instrument, that is indicative in its legal nature, is the territorial planning instrument that reaches the highest

levels of active public participation in Chile. The concept of sustainability is not present in the vision or goals of the vast majority of the Community Development Plans analyzed. It is also barely included in the terms of objectives or guidelines for action. This reveals that the territorial actors that participate in the formulation of this type of territorial planning instrument have not appropriated the concept of sustainability. This same judgment can be applied to professionals and experts that work in the formulation of other territorial planning instruments previously analyzed, both of the public and private sectors.

Table 6 shows that the levels of political abstraction of the three dimensions are not referred significantly. Only 20.1% of the reviewed Community Regulatory Plans referenced political abstraction. At the level of strategic abstraction, the percentages improve substantially with respect to strategic abstraction, reaching in average 56.9%. The environmental sustainability dimension is present in 70.7% of the Community Regulatory Plans analyzed (forty-one of fifty-nine cases). At the operative level of abstraction, there is a slight increase compared to the strategic level reaching between the three dimensions, an average of 63.8%. The environmental sustainability dimension stands out with 79.3% (forty-six of fifty-nine cases). By its nature, the Community Development Plan is a territorial planning instrument that promotes more concrete initiatives to perform in the framework of communal planning, compared to other instruments despite that a recent publication⁴⁸ argues that only 5% of these were actually made effective.

F. Territorial Planning Instrument Relational Analysis

We concluded our study by analyzing the five instruments that support the foundations of urban planning in Chile. Graph 1 shows the differentials of the degree of explicitness that the three dimensions of sustainability reach together. Although the sample sizes are different, we seek to understand through the comparative reading that a higher percentage refers to greater consideration of the dimensions of the concept at different levels of abstraction.

The graph shows that the Regional Development Strategy concentrates comparatively the highest percentages of explicit considerations of the dimensions of sustainability, especially those referred to the levels of strategic and political abstraction (in that order). Less significant is the consideration in the level of operative abstraction. In this case, however, the percentage exceeds what is reached for the same level of abstraction in the Urban Development Regulatory Plan and Intercommunal Regulatory Plan. The Community Development Plans contemplate a significant consideration of the dimensions at the operative and strategic levels of abstraction (in that order).

In all these cases, it is assumed that when the three dimensions of sustainability are present in more than half of the territorial planning instruments, there is concrete evidence that the concept of sustainability is partially or completely integrated and recognized. A certain level of coherence and integration between these territorial planning instruments is necessary in order to embrace the vision, objectives, guidelines, and initiatives and to assure that the concept of sustainability is explicit in the urban planning as a whole. Therefore, because there is minimum consideration of the concept of sustainability in the Urban Development Regulatory Plans and Intercommunal Regulatory Plans, and because there is a lack of presence of the concept of sustainability in the Communal Regulatory Plans at almost all the levels of abstraction, we conclude that, in Chile, the territorial planning instruments lack a real consideration of the concept of sustainability in their design and statements.

VI. Conclusion

We have been able to answer the research questions by reviewing the territorial planning instruments. We have determined that the concept of sustainability as such has not been considered explicitly in most territorial planning instruments. This is especially true regarding instruments of normative nature. In the Inter-communal Regulatory Plan, consideration has been scarce and in the case of the Communal Regulatory Plan, consideration has been inexistent. For indicative instruments, especially the Regional Development Strategy and Community Development Plan, the fact is that in practice it is about instruments with less real impact on the urban planning processes. This is true even though there is a further consideration at least in some of its

dimensions, especially on environmental sustainability.

This responds to the fact that the institutional structure of the Chilean government maintains a high level of centralization and sectorial character on public policy decisions. Therefore, sectorial decisions that ministries drive through their own planning and investment programs⁵⁰ predominate beyond the efforts of regional and local planning being promoted through the instruments analyzed. This means that efforts to incorporate the concept of sustainability in the territorial planning instrument not only results in insufficient, limited, and heterogeneous, but the chances of materializing them into decisions that effectively promote actions in this regard seems very distant. This is especially true in our large cities. In this sense, we have fulfilled the hypothesis for this exploratory study.

Finally, we can say that our country suffers from a policy that aims to progress in the incorporation of the concept of sustainability and its dimensions in the territorial planning instrument. This reveals a combination of a lack of command of the actors involved in the development and updating of these instruments and a certain institutional resistance to recognize the concept when defining its mission and objectives.

Footnote

[dagger]* This Article was developed in the framework of the research carried out by the Center for Sustainable Urban Development (CEDEUS) FONDAF 15110020 program and the Anillos Research Project SOC1106 of the PIA program, both funded by the National Commission for Science and Technology of Chile (CONICYT).

Footnote

1. See Menât Polk, Institutional Capacity-Building in Urban Planning and PolicyMaking for Sustainable Development: Success or Failure?, 26 Plan. Prac. &Res. 1S5, 202(2011).

Footnote

2. The regions are political-administrative divisions of Chile's territory, where the central government decentralizes certain tasks to the authority of the Intendente (a governor which is designated by the president), and the Regional Councils (whose members are elected by popular vote). At the region level, the central government ministries also have Secretariats of Representation.

Footnote

3. The commune in Chile is an autonomous territory delimited in politicaladministrative terms, with a local administration that is run as a municipality and governed by a Mayor and a Municipal Council, both popularly elected. In Chile there are 346 communes and 345 municipalities (the municipality of Cabo de Hornos administers two communes including Chile's territory in Antarctica).

4. See, e.g., Frank-Martin Belz &Ken Peattie, Sustainability Marketing: A Global Perspective 8-10 (Wiley, 2d 2012).

5. See Henri Acselrad, Sustentabilidad y ciudad [Sustainability and City], 25 Revista Latinoamericana de Estudio Urbano Regionales 35, 42 (1999) (Chile).

6. Gro Harlem Brundtland (Chairman of World Comm'n on Env't &Dev.), Our Common Future, U.N. Doc. A/42/427 (Mar. 20, 1987).

7. See id. at 11.

Footnote

8. See Joe Ravetz, Integrated Assessment for Sustainability Appraisal in Cities and Regions, 20 Env'tl. Impact Assessment Rev. 31, 35-36 (2000).

9. See id. at 41-43.

10. Lydia Lamorgese & Davide Geneletti, Sustainability Principles in Strategic Environmental Assessment: A Framework for Analysis and Examples from Italian Urban Planning, 42 Env'tl. Impact Assessment Rev. 116, 117 (2013).

Footnote

11. U.N. Conference on Env't &Dev., Agenda 21, ? 7.35, U.N. Doc. AI CONF.151/26 (Vol. I) (June 3, 1992).

12. See Richard K. Norton, *Agenda 21 and Its Discontents: Is Sustainable Development a Global Imperative or Globalizing Conspiracy?*, 46 *Urb. Law.* 325, 328 (2014).

13. Jonathan R. Barton, *Susie ntabilidad urbana como planificación estratégica [Urban Sustainability as Strategic Planning]*, 32 *Revista Latinoamericana de Estudio Urbano Regionales* 27, 31 (2006) (Chile); see also Jonathan R. Barton, *El Poder de la Gobernanza: el 'eslabón perdido' de la sustentabilidad urbana [The Power of the Governance: The 'Lost Link' of Urban Sustainability]*, in 9 *Serie GEOlembros* 41329 (Gloria Yáñez et al. eds., 2008) (Chile).

14. The Brundtland Report states "[h]umanity has the ability to make development sustainable to ensure that it meets the needs of the present without compromising the ability of future generations." Brundtland, *supra* note 6, at 16. The use of the "humanity" concept already states that sustainability is a goal to be shared at the planetary level, but it does so in a "creatively ambiguous" way, leaving space for many interpretations as to how to implement it. See, e.g., Robert W. Kates et al., *What is Sustainable Development? Goals, Indicators, Values, and Practice*, 47 *Env't Sci &Policy Sustainable Dev.* 8, 16 (2005). Some international reports produced in the United Nations system link this Brundtland definition on sustainable development to other global goals, such as climate change and urban development. U. N. General Assembly, *Resolution Adopted on 25 September 2015, ?? 11.1-13.3, U.N. Doc. A/RES/70/1* (Sept. 25, 2015) [hereinafter *September 25 Resolution*] (reinforcing this planetary ambition of sustainability).

15. See Francisco Javier Rosas Ferrusca & Edgar Eduardo Zuffiga Cordero, *Políticas públicas, proceso de metropolización y desarrollo sustentable [Public Policies, Urbanization Process, and Sustainable Development]*, 13 *Qutvera* 134, 161-62 (2011) (Mex.).

16. See, e.g., *September 25 Resolution*, *supra* note 14 at ? 11.1; U.N. Dep't of Econ. & Soc. Affairs, *Sustainable Cities and Human Settlements, Sustainable Dev. Knowledge Platform*, <https://sustainabledevelopment.un.org/topics/sustainablecities> (last visited Feb. 28, 2016).

Footnote

17. See, e.g., Jan Rotmans et al., *An Integrated Planning Tool for Sustainable Cities*, 20 *Envtl Impact Assessment Rev.* 265, 273 (2000); Lamorgese & Geneletti, *supra* 10, at 3.

18. See Steffen Lohrey & Felix Creutzig, *A 'Sustainability Window' of Urban Form*, *Transp. Res. Part D: Transp. & Env't.* (forthcoming 2016) (manuscript at 2), <http://dx.doi.org/10.1016/j.trd.2015.09.004>; Yuliya Voytenko et al., *Urban Living Labs for Sustainability and Low Carbon Cities in Europe: Towards a Research Agenda*, *J. Cleaner Prod.* (forthcoming 2016) (manuscript at 8), <http://dx.doi.org/10.1016/j.jclepro.2015.08.053>; Ying Zhang, et al., *Exploring the Link Between Urban Form and Work Related Transportation Using Combined Satellite Image and Census Information: Case of the Great Lakes Region*, 47 *Int'l J. Applied Earth Observation & Geoinfo.* 139, 139 (2016).

19. Craig Anthony (Tony) Arnold, *Resilient Cities and Adaptive Law*, 50 *Idaho L. Rev.* 245, 261 (2014).

20. See, e.g., Yosef Rafeq Jabareen, *Sustainable Urban Forms: Their Typologies, Models, and Concepts*, 26 *J. Plan. Educ. & Res.* 38, 38-39 (2006) (exploring if certain types of urban morphology can contribute more or less in the pursue of higher sustainability levels, focusing on the urban forms identified and their design concepts). See also Bill Hillier, *Spatial Sustainability in Cities: Organic Patterns and Sustainable Forms*, in *Proceedings: Seventh International Space Syntax Symposium 1* (Daniel Koch et al. eds., 2009); Mánchela Sepe, *PlaceMaker: Supporting Sustainable Urban Planning*, 21 *Plan. Prag. & Res.* 349 (2006) (demonstrating more insights regarding the inclusion of spatial variables in the study of urban sustainability). But see Nathan Fiala, *Measuring Sustainability: Why the Ecological Footprint is Bad Economics and Bad Environmental Science*. 67 *Ecological, Econ.* 519 (2008) (questioning the use of the ecological footprint as the sustainability metric in various studies).

Footnote

21. See Holger Wallbaum et al., *Prioritizing Sustainability Criteria in Urban Planning Processes: Methodology*

Application, 137 J. Ukb. Plan. &Dev. 20, 20 (2011).

22. Ravetz, *supra* note 8, at page 31-32 ([S]ustainability appraisal (SA) is both impossible and essential. In a world of rapid change, interdependency and uncertainty, nothing can be said to be truly sustainable-so comprehensive and definitive SA is de facto not possible. At the same time, practical methods of SA are clearly essential in managing the increasingly global impacts of human activity.").

23. See R. Kerry Turner, *Speculations on Weak and Strong Sustainability* 34-35 (Ctr. for Soc. &Econ. Research on the Glob. Env't, Working Paper No. GEC9296, 1992), http://cserge.ac.uk/sites/default/files/gec_1992_26.pdf.

24. Compare Ravets, *supra* note 8, and Turner, *supra* note 23. In this regard, both authors seem to lack more pragmatic proposals regarding how to achieve sustainability.

Footnote

25. See Roberto Hernández Sampeeri et al., *Metodología de la Investigación* [Investigation Methodology] 1-4 (Casas Pérez ed., 4th ed. 1997) (Colom.).

26. *Indice de la Ley General de Urbanismo y Construcciones* [LGUC] [General Law of Urban Planning and Construction] tit. II, ch. II, ? 3, art. 34 (Chile). The Inter-communal Regulatory Plan is responsible for determining the urban planning through the regulation of the physical development of the urban and rural areas of the communes that, because of their relationships and levels of interdependency, integrate a single urban unity. *Id.* When this unity surpasses 500,000 habitants, it falls under the category of metropolitan area for the purposes of planning. *Id.*

27. *Id.* at ? 4, art. 41 (Chile). The Communal Regulatory Plan is an instrument consisting of a set of rules on proper hygiene, safety in buildings and urban spaces, as well as rules regarding the harmony between residential, working, industrial, equipment, and entertainment areas within the commune. *Id.*

Footnote

28. Law No. 19.175, *Orgánica Constitucional sobre Gobierno y Administración Regional* [Constitutional Law on Regional Government and Administration], Noviembre 5, 1992, *Diario Oficial* [D.O.] (Chile). The Regional Development Strategy (ERD) is an instrument developed and applied by regional governments in accordance with Law 19.175 and with the assistance of the Sub-secretariat of Regional Development of the Ministry of Interior (SUBDERE). Subsecretaría de Desarrollo Regional y Administrativo [SUBDERE], *Guía Metodológica para la Formulación de Políticas Públicas Regionales* [Regional Development Strategy] 6-7 (2009) (Chile), http://www.subdere.cl/sites/default/noticiasold/articles-76900_recurso_1.pdf.

29. LGUC tit. II, ch. II, ? 2, art. 30-31 (Chile). The Ministry of Urban Planning is the one that orients the development of urban centers within the regions and that it will be put into action through the Urban Development Regulatory Plan, which determines the roles of urban centers, their areas of mutual influence, gravitational relationships, growth targets, etc. *Id.*

30. Law. No. 18.695, *Orgánica Constitucional de Municipalidades* [Constitutional Law on Municipalities], Julio 7, 1992, D.O. (Chile). The Community Development Plan (PLADECO) is an instrument applied by the municipalities in accordance with Law 18.695 and methodologically assisted by the SUBDERE. *Id.*; see also Subsecretaría de Desarrollo Regional y Administrativo [SUBDERE], *Manual de Elaboración del Plan de Desarrollo Comunal* [The Community Development Plan] 9 (2009) (Chile), http://www.subdere.gov.cl/sites/default/files/documentos/articles-77172_recurso_1.pdf.

31. It is important to notice that a series of specific legal modifications have been made, but have not substantially affected the nature of the Territorial Planning Instruments (DPTs) regulated by this law (which originated in 1975, in absence of democracy). See Law No. 458, *Pública Ley General de Urbanismo y Construcciones* [General Public Law of Urban Planning &Construction], Diciembre 18, 1975, D.O. (Chile). This law is the legal source that contains the principles, duties, powers, responsibilities, faculties, rights, penalties, and other rules that are binding to the governing bodies, officials, professionals, and individuals involved in actions of urban planning, urbanization, and construction within the countries territory. LGUC tit. II, ch. II, ? 2,

art. 1-2 (Chile); see Definiciones Instrumentos de Planificación Territorial IPT, [Definitions of 'TPT Planning Instruments], Ministerio de Vivienda y Urbanismo [MINVU] [Ministry of Housing and Urban Development] (last visited Feb. 28, 2016) [hereinafter MINVU] (Chile), http://www.minvu.cl/opensite_20070427120550.aspx.

32. The periodicals are transitional or permanent legal provisions that this department of the Ministry of Housing and Urbanism can dictate within the legal framework of LGUC. See, e.g., MINVU, *supra* note 31.

33. The law in question establishes some landmarks regarding the decentralization of the Chilean national state, promoting a higher autonomy at the regional level. Law No. 19.175, *Orgánica Constitucional sobre Gobierno y Administración Regional* [Constitutional Law on Regional Government and Administration], Noviembre 5, 1992, D.O. (Chile).

Footnote

34. Sergio Boisier, *Chile: la vocación regionalista del gobierno militar* [Chile: Regionalism of Military Rule], 26 *Envtl Impact Assessment Rev.* 81, 89 (2000). ("The military government assigned the CON ARA the (historical) task of reorganizing the political-administrative division of the country and of the Governmental and Administrative systems. This is how Decree Laws 573 and 575 of 1974, that established the current regionalization, were originated. Subsequently, Decree Laws 1230 and 1317 of 1975 were modified, to establish the provincial division and in 1976 Decree Law 1289 comes into operation regarding communal divisions.").

35. Law. No. 18.695, *Orgánica Constitucional de Municipalidades* [Const. L. on Mun.], Julio 7, 1992, D.O. (Chile).

36. See Ricardo Núñez Muñoz, *Realidad y desafíos del municipio chileno* [Realities and Challenges of the Chilean Town], 8 (Mar. 2006) (unpublished manuscript),

http://www.munitel.cl/file_admin/archivos_munitel/estudios/estudios2.pdf (providing interesting analysis on the process of municipalization driven by the military government prior to the arrival of democracy, as well as its subsequent reforms).

37. Cf. Lars Tummers et al., *Explaining the Willingness of Public Professionals to Implement Public Policies: Content, Context, and Personality Characteristics*, 90 *Pub. Admin.* 716, 716 (2012) ("The degree to which street-level bureaucrats are able to cope with these changing social, political, and managerial demands may to some extent explain their willingness or resistance in implementing new government policies addressing these demands.").

Footnote

38. See MINVU, *Archivo Nacional IPT* [National Archive of IPTs], *Observatorio Urbano* [Urban Observatory] (last visited Feb. 28, 2016) (Chile), http://www.observatoriourbano.cl/lpt/busca_decreto.asp.

39. See R. Sierra Bravo, *Técnicas de Investigación Social Teoría y Ejercicios* [Social Research Theory Techniques & Exercises] 287-88 (14th ed. 2008).

Footnote

40. See generally Jaime Iturriaga Meneses, *Ordenamiento Territorial en Chile: instituciones, instrumentos, Problemas y Propuestas* [Zoning in Chile: institutions, instruments, Problems, and Proposals], (Mar. 2003) (unpublished Masters thesis, Pontificia Universidad Católica de Chile), <http://www.ceh.cl/wp-content/uploads/2009/12/J-Iturriaga-2003.pdf> (discussing in greater depth the Chilean planning instruments, particularly in regard to sustainability, problems faced due to state regulations, and proposals for improvement).

Footnote

41 See, e.g., U. N. General Assembly, *Resolution Adopted on 27 July 2012, ? 11*, U.N. Doc. A/RES/66/288* (July 27, 2012) [hereinafter *July 27 Resolution*]; David Le Blanc, U. N. Dep't of Econ. & Soc. Affairs, *Back to Our Common Future* 37 (2012).

Footnote

42. *July 27 Resolution*, *supra* note 41, at ?? 22,44; Le Blanc, *supra* note 41, at 26-30.

43. *July 27 Resolution*, *supra* note 41, at ? 2; Le Blanc, *supra* note 41, at 28-30.

Footnote

44. It is important to notice that in practice, the territorial planning instruments analysed in this work are often more independent in their formulation compared to the others, except for the Communal Regulatory Plans, which must by law comply to the corresponding Inter-communal Regulatory Plan (PRI). See *infra* Sections A-E.

45. To review the characteristics of each instrument, please see *infra* Table 1.

Footnote

46. Law No. 41.242 art. 3, Augusto 26, 2015, D.O. (Chile); *Id.* art. 5.

Footnote

47. It should be noted that due to lack of access to the current Community Development Plans of the municipalities of Santiago, Maipú and Concepcion, we decided to add the Community Development Plans of three communes also considered as part of a metropolitan area of influence for Greater Santiago. These are the communes of Colina, Lampa and Padre Hurtado.

Footnote

48. See Miguel Ángel Ruz et al., Planes de Desarrollo Comunal: propuestas para mejorar su efectividad como instrumento de planificación, participación y rendición de cuentas municipal [Community Development Plans: Proposals to Improve Planning, Participation, and Municipal Accountability], *Propuestas para Chile [Proposals for Chile]* 183, 192 (2014).

Footnote

49. The PRCs are excluded from the graph, as these do not refer to this concept (nor any dimensions) at any level of abstraction. See *infra* Section D.

Footnote

50. It is estimated that according to the Budget Department of the Ministry of Finance that public investment in regional and local decisions together does not exceed 40% of the total for all of Chile.

AuthorAffiliation

Arturo Orellana,* Federico Arenas,** and Juliana Carvalho Cortes Silva***

AuthorAffiliation

* Associated Professor of the Urban and Regional Studies Institute of the Pontificia Universidad Católica de Chile, Doctor in Human Geography by the Universidad de Barcelona, Master in Urban Development by the Pontificia Universidad Católica de Chile, Economist by the Universidad de Chile.

** Professor of the Geography Institute of the Pontificia Universidad Católica de Chile, Doctor in Economical and Social Sciences, with mention in Geography, by the University of Geneva, and Geographer by the Pontificia Universidad Católica de Chile.

*** Research Assistant of the Urban and Regional Studies Institute of the Pontificia Universidad Católica de Chile, Master in Human Settlements and Environment by the same university, graduated in International Relations by the Pontificia Universidad Católica de Minas Gerais, Brasil.

Materia: Public policy; Agreements; Urban planning; Ecosystems; Community development; Decision making; Climate change; Case studies; Sustainable development; Environmental economics; International agreements;

Lugar: Chile

Título: The (Still Frail) Incorporation of the Sustainability Concept in Chilean Urban Planning Instruments [dagger]*

Autor: Orellana, Arturo; Arenas, Federico; Silva, Juliana Carvalho Cortes

Título de publicación: The Urban Lawyer

Tomo: 48

Número: 2

Páginas: 279-288,290-294,296,298-299,301,303,308-310

Número de páginas: 23

Año de publicación: 2016

Fecha de publicación: Spring 2016

Año: 2016

Editorial: American Bar Association

Lugar de publicación: Chicago

País de publicación: United States

Materia de publicación: Law, Public Administration

ISSN: 00420905

Tipo de fuente: Scholarly Journals

Idioma de la publicación: English

Tipo de documento: Feature

Características del documento: References Maps Diagrams Tables Graphs

ID del documento de ProQuest: 1826428390

URL del documento: <http://search.proquest.com/docview/1826428390?accountid=14621>

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Última actualización: 2016-10-07

Base de datos: Research Library

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